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Eastern U.S. Agricultural & Food Export Council

The U.S. as A Key Player In Pork Export Markets

The U.S. became a net exporter of pork for the first time in over 40 years in 1995, exporting over 100 million more pounds (carcass-weight basis) than it imported. Long-term USDA projections indicate increasing pork exports through 2005.

Net exporter status represents a culmination of structural changes in the U.S. pork industry since the 1970's. The restructuring effectively places the U.S. in the company of the two other largest pork-exporting countries—Denmark and Taiwan. In 1995, Denmark exported 886 million pounds of fresh pork, followed by Taiwan at 840 million pounds, and the U.S. at 771 million pounds.

Based on the resources and technology utilized by the three exporting countries to develop or enhance their competitiveness, conclusions regarding their future competitiveness can be made. Also, the common factors in the success of the U.S., Denmark, and Taiwan in the export

markets can be used to identify additional countries with potentially competitive pork export industries.

U.S. Pork Industry Lowers Costs

The competitiveness of U.S. pork on international markets is a direct outcome of industry restructuring underway since the 1970's. High producer returns in the 1970's and into the 1980's appear to have provided the initial financial incentives to drive the "industrialization" of U.S. hog production.

Over the last several years, new and significant infusions of financial capital, timely improvement in genetics and management practices, available farm labor, and a plentiful land base, combined to create an industry characterized by fewer and significantly larger production units. The larger units are frequently operated under contract and often located outside traditional hog production regions.

Part of the economic explanation for the large hog production facilities is the desire to achieve economies of size and thereby lower the cost of production. Large hog operations achieve economies of size through more intensive use of facilities, by lowering feed costs through better feed conversion, and by lowering labor costs.

The drive to achieve economies of size in the hog industry has induced the industry's rapid adoption of managerial and technical innovations. For example, large production operations are almost always characterized by some combination of new managerial practices whose objectives range from reducing the incidence of disease to reducing finishing time and feed costs.

Improved genetics of breeding stock has also been an important source of lower production costs for the hog production industry. Improvements in breeding herds have contributed significantly to overall increases in pigs per litter, feed conversion efficiency, and lean meat yield.

The availability of land for production expansion and waste disposal is a critical determinant in the industry's drive to achieve economies of size and realize declining costs. Much of the growth in production facilities has taken place outside the traditional hog producing region—the Corn Belt. In particular, lower relative costs of labor and manure disposal induced new production facilities to locate in North Carolina. Additional significant expansion is currently underway in Oklahoma, Texas, and Utah, states characterized by relatively low population densities and dry climates. Such characteristics are critical to capturing economies of size and lowering manure disposal costs.

The pork processing industry is also a major determinant of industry competitiveness in export markets. As on the production side, recent restructuring has given the pork processing industry the ability to produce large quantities of uniformly high-quality pork products at competitive world prices. The pork processing industry today is characterized by a decreasing number of companies, the most profitable of which operate very large, relatively new, capital-intensive processing and packing facilities.

The competitiveness of such facilities is critically dependent on high volumes of raw product, because unit costs are driven lower as more hogs are slaughtered. In current state-of-the-art packing facilities, economies of size begin to be realized when 4 million hogs are processed per year.

Restructuring on the processing side of the U.S. pork industry, but particularly on the production side, is the product of the drive to grow in order to capture economies of size, thereby lowering production costs and enhancing competitiveness. The plentiful U.S. land base is thus a critical element in attaining price competitiveness with pork exported from Denmark and Taiwan.

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Denmark: Tailoring Products To Buyers' Demands

Historically, Denmark has been a major pork exporter. In 1995, Denmark led the world in pork exports, exporting more than 77 percent of production, about half of which goes to European Union (EU) countries. Like the U.S. and Taiwan, Denmark's primary export market outside the EU is Japan. Denmark's strategy has been to target value-added markets.

As a country no bigger than the combined area of Massachusetts and New Hampshire, Denmark must rely on advantages other than economies of size to maintain its competitive position. Several factors contribute to Denmark's success as a leading pork exporter: a vertically integrated industry, structural developments leading to greater productivity, firmly established commercial relationships and excellent customer service, and high veterinary and health standards.

Danish pork production is vertically integrated between producers and processors via cooperatives. Ninety-eight percent of all Danish pork producers are members of Danske Slagterier (DS), the federation of Danish hog producers and slaughter-

houses. DS provides producers with genetic and breeding information, guaranteed purchases, and incentives to improve production.

Over 93 percent of all hogs are slaughtered in DS slaughterhouses. As members of the cooperative, farmers deliver all production to the slaughterhouse. Farmers receive a pooled price for their hogs, fixed weekly by the Danish Bacon and Meat Council, and a percentage of profits from the slaughterhouse at the end of the year. Tight coordination between all marketing levels facilitates DS's ability to respond to customer feedback quickly. Premiums are paid for certain qualities, such as leaner or heavier hogs, depending upon customer demands.

Structural developments in hog production have resulted in improved productivity. The number of producers has declined from 78,000 in 1975 to 24,000 in 1995. Today, about 50 percent of the holdings have 200 hogs or more, compared with only 10 percent in 1976. Restructuring over the last 20 years has reduced the number of slaughterhouse companies from 50 to 4, and at the same time improved the productivity of meat production.

Long-term commercial relationships, product quality and consistency, and excellent customer service rather than price, are keys to Danish competitiveness. Denmark pioneered the practice of marketing cuts rather than carcasses, and developed niche markets. For example, Denmark exports high-end ham products as well as other frozen pork products to the U.S., whereas exports to Japan consist primarily of frozen-product cuts made without bone and fat for the Japanese processing sector.

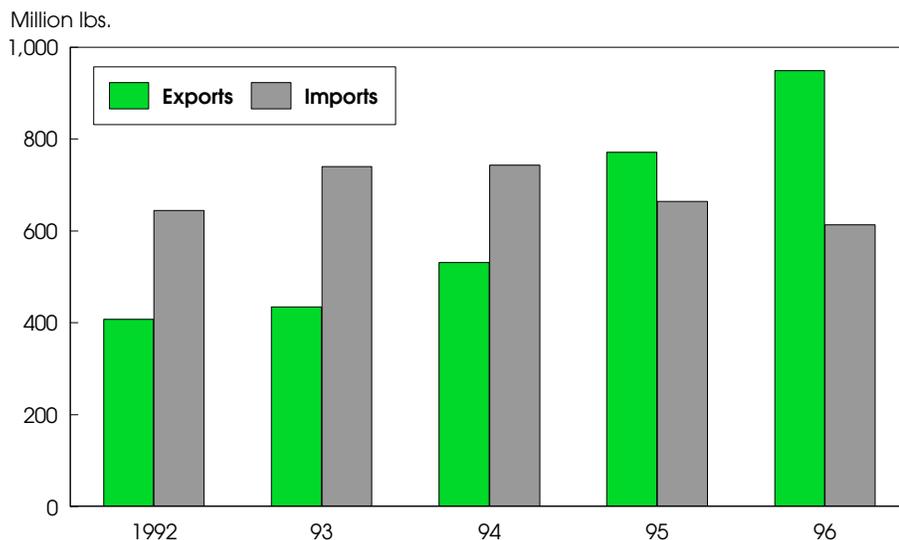
High veterinary and health standards and an ability to track its product from origin to market will help Denmark remain competitive on the world market. These factors are important, especially in markets where consumers are particularly concerned with food safety, such as Japan and other Asian markets. In markets such as these, Denmark's longstanding disease-free status has enabled it to establish and keep market share in spite of other exporters. Denmark hopes to retain market share by raising its standards further through technical innovation.

Denmark's medium-term potential to remain price competitive on world markets is limited by its land base, its location, and World Trade Organization (WTO) rules calling for reductions in export subsidies on sales outside the EU. Strict environmental regulations limit the storage and spreading of manure, the use of nitrogen from livestock manure, and the size of the herd relative to the amount of land available. The larger the hog farm, the more acreage is required by law for spreading manure.

Danish hog production is presently limited to between 20 and 21 million head annually, with the capacity to expand production to 25 million head. Current production is located in the west of the country, while the only available land for new production is located in the south near Copenhagen. A debate is underway over the future use of this land, as it is good arable land with attractive alternative uses.

The fresh pork market is the fastest growing segment of the very large and lucrative Japanese market. By virtue of its

U.S. Is Now a Net Exporter of Pork



1996 projection.

Economic Research Service, USDA

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geographical location, Denmark is out of reach of the fresh pork market in Asia because of high transportation costs and short shelf life. Hence, Denmark cannot deliver fresh pork to Japan at a price that is competitive with U.S. fresh pork.

As a result of WTO-induced export subsidy reductions, Danish export support for pork dropped 50 percent from 1994 to 1995. This reduction, however, has had little effect on total Danish pork exports.

For Denmark, restitutions to exporters from the government to offset the difference between EU and world prices had essentially covered the high cost of grains. But expected reductions in grain prices will make restitutions less important. While no restitutions are required to export pork to the lucrative Japanese market, export subsidies have been helpful when shipping low-value products to Russia and Eastern Europe. However, many producers have already adjusted to a future with little export support.

To maintain competitiveness Denmark will need to overcome its land constraint. Development and rapid adoption of new production and processing technologies could help producers to lower costs without economies of size.

Denmark has already made some advances in this area. A national breeding program, run by the Danish Bacon and Meat Council, as well as breeding information and technical advice provided by the National Farmers Union, seek to keep producers up-to-date with the latest scientific advances. Over the last 6 years, Danish producers have increased the number of hogs per sow per year, improved the feed conversion ratio, and raised the daily weight gain.

In the future, Denmark's competitors are likely to acquire these new technologies relatively more quickly than in the past. The Danes will need to adopt new technology very quickly to maintain competitiveness, and to keep the stream of new technologies flowing.

Taiwan: Focusing on The Japanese Market

As in the Danish case, Taiwan's pork industry is clearly export oriented. More than 30 percent of production is sold abroad, exceeding comparable figures for Denmark (27 percent, excluding shipments to EU countries) and the U.S. (4 percent). Currently, Taiwan is highly competitive with the U.S. and Denmark in the Japanese pork import market.

Taiwan's pork industry maintains its competitiveness despite the necessity of importing almost all of its feed grain. However, long-term USDA projections indicate decreases in Taiwan's exports beginning well before the year 2000. As in the Danish industry, medium- and long-term loss of export market competitiveness by Taiwan's pork industry can be explained in terms of Taiwan's limited land endowment.

Taiwan is a large and successful pork exporter because the industry focuses almost exclusively on the Japanese market. Japan typically accounts for over 90 percent of exported Taiwanese pork. Proximity to a very large and lucrative import market helps the Taiwanese pork industry to offset higher costs imposed by limited land endowment and high feed costs. Lower transport costs likely help compensate for the cost advantage gained by the U.S. industry from economies of size, or from product uniformity and customer service that accompany Danish exports.

However, Taiwan's relatively small land endowment will likely reduce the price competitiveness of its pork exports even in the Japanese market. Taiwan's limited land endowment constrains opportunities to expand in order to capture economies of size. Moreover, manure disposal costs are becoming prohibitive. The Taiwanese government is increasingly restrictive in regulating manure handling and treatment, with permits to expand production becoming more difficult to obtain. Thus the production expansion necessary to remain cost-competitive on world markets will likely restrict Taiwanese competitiveness. As in the Danish case, it will

become necessary for Taiwan's pork industry to develop other means of maintaining competitiveness in foreign markets.

Prospects for New Exporters

Part of the success of Denmark, Taiwan, and the U.S. in exporting pork lies in the fact that each country has a population that consumes pork. Hence, certain cuts of pork can be exported while other cuts can be consumed domestically. It would be very difficult, if not impossible, for a nation that consumes little pork to begin raising and exporting pork to other countries.

Pork production and processing currently draw significant efficiency gains from economies of size in order to deliver a product that is price-competitive. Thus, a pork exporting country with a large potential to expand production, such as the U.S., should become more price-competitive relative to other pork exporting countries with less potential to expand, such as Denmark and Taiwan. Under the criteria of expansion potential, a number of other countries could develop into major pork exporters.

An obvious candidate is Canada. Canada currently exports pork, mainly to Japan. Canada has a very large land endowment, a well-developed feed grain base, a population that consumes pork, and a pork production and processing sector that is beginning a restructuring process similar to the U.S. industry. A limiting factor could be weather, and the constraints on manure spreading that long Canadian winters would impose.

The Sonora region of Mexico also appears to have potential as a major pork exporter. The large, dry, and sparsely populated region is ideal for pork production, and well situated to export to its NAFTA partners and to Asia. The limiting factor currently is hog cholera. However, WTO agreements offer a means of declaring regions within a country, such as Sonora, "disease-free" and thus eligible to export pork to other disease-free countries.

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Australia may also have potential to develop a competitive pork exporting industry. Land is certainly available for expansion in Australia. Limiting factors currently include the relatively small size of its production and processing industry. Problems could also develop for a pork industry in Australia in years when food-use wheat prices are strong, bidding wheat away from animal feeding.

Land-rich countries in Eastern Europe, as well as Russia and China, offer possibilities for development of efficient pork export industries. The limiting factors in each case however, are fragile market structures and underdeveloped infrastructures.

France and Spain offer some opportunity for expansion of the European pork industry. Both countries have relatively large land endowments relative to their neighbors. Factors that limit the possibility of exports are high labor costs, imposed limits on nitrate additions to the environment, and restrictive animal welfare measures.

In short, the current set of major pork exporters are capable of exporting large quantities of high-quality pork products at competitive prices. However, technical and managerial innovations are relatively easy to transfer across national borders, resulting in increased productivity and industry growth. For U.S. producers, a large land endowment is the key element that allows the realization of economies of size and price competitiveness with pork exported by Denmark and Taiwan. For both Denmark and Taiwan, very limited land endowments constitute a critical constraint on expansion potential and relative competitiveness.

While the U.S. pork industry has restructured, developed, and raised its competitiveness over the last several years, newcomers to the export market—particularly Canada and Mexico—may prove to be formidable competitors in the future. [Mildred Haley (202) 219-0833 and Liz Jones (202) 219-0619; mhaley@econ.-ag.gov; eajones@econ.ag.gov] 

Agriculture & the WTO: The Road Ahead

The Uruguay Round of multilateral trade negotiations, completed in 1994, was historic in that it was the first successful comprehensive attempt to bring agriculture into the general discipline of the General Agreement on Tariffs and Trade (GATT). The UR was also unique in that some of the agricultural commitments agreed to by the major players were achieved prior to signing of the agreement.

But the Uruguay Round (UR) keeps open the impetus for agricultural reform. Article 20 of the UR Agreement on Agriculture requires that negotiations for continuing the reform process be initiated one year before the end of the implementation period (1995-2000). A new mini-round of agricultural negotiations, therefore, begins in 1999.

A World Trade Organization (WTO) ministerial meeting is scheduled for December 1996 in Singapore to review, among other things, developments since the UR. What are some of the issues that are likely to emerge for the 1999 mini-round of agricultural negotiations?

The agenda will most likely cover issues left outstanding in the UR Agreement on Agriculture, particularly those relating to market access, domestic support, and export competition. But emerging issues not directly addressed by the Agreement on Agriculture might also be a big part of the negotiating agenda.

These issues include areas such as sanitary and phytosanitary provisions and state trading. Progress in the implementation of various UR agreements and country commitments are likely to have a bearing on all agricultural issues.

Improving Market Access

Market access issues are likely to revolve around two policy instruments: tariffs and quotas. Discussions on the level of tariffs are expected to dominate the agenda on market access. The UR provided governments considerable leeway in calculating and binding tariff levels. Some countries adopted tariff rates in which bound levels specified in the UR country schedules were set extremely high. The bound tariff peaks for agriculture in many developed countries range from 100 percent to nearly 500 percent. This is in sharp contrast to nonagricultural tariff peaks, which range from 25 to 50 percent. Both agricultural exporters and nonagricultural interest groups can be expected to pressure to change this.

The UR Agreement on Agriculture adopted a formula-based tariff reduction in which simple averages across products within a country's agricultural sector were acceptable. The country schedules for many OECD (Organization for Economic Cooperation and Development) members indicate that tariff reductions varied among agricultural industries. Reductions were at the minimum required 15 percent per tariff line for most of the highly protected industries while, for competitive industries, reductions were considerably more than the average 36-percent reduction. The net result was that substantial levels of protection were retained for import-sensitive products, and tariff variations among sectors may have increased.

Among the issues likely to be raised if the formula-based sectoral approach to tariff reductions is to continue is whether to change the simple-average formula to a trade-weighted scheme. Also, should the minimum tariff reduction commitment be increased and tied to maximum allowable bound tariffs? And, should a procedure be used to cut higher tariffs at steeper rates as was done with the Swiss formula in the Tokyo Round?

Associated with tariffication is the Special Safeguard Provision which protects goods subject to tariffication from